

1. Amendments to the Claims:

A listing of the entire set of pending claims (including amendments to the claims, if any) is submitted herewith per 37 CFR 1.121. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method of processing images, in which individual images succeed one another in a direction of succession, the method comprising:
constructing a multi-dimensional data set is constructed from the individual images,
which wherein the multi-dimensional data set assigns data values to positions in a multi-dimensional space, and
which the multi-dimensional space is set up by the direction of succession and two directions parallel to the surface of the individual images,
reconstructing a slice through the multi-dimensional data set is reconstructed along a cut plane through the multi-dimensional space,
segmenting a region of interest from the one or more relevant images is performed in one or more of the individual images, wherein the segmenting is performed on the basis of information in the reconstructed slice along the cut plane through the multi-dimensional data set,
locating an edge in the reconstructed slice, wherein the segmenting in the region of interest in the one or more images is performed on the basis of the location of the edge found in the relevant, wherein and
the direction of the cut plane has a component in the direction of succession, and in which a region of interest is located on the basis of the cut plane.

2.-3. (Cancelled).

4. (Currently Amended) A method of processing images as claimed in claim [[3]]1, in which respective slices through the multi-dimensional data set are reconstructed along a plurality of cut planes through the multi-dimensional space, and the directions of the individual cut planes have components in the direction of succession, individual edges are tracked in the individual slices, and the segmentation of the region of interest in the one or more images is performed on the basis of the individual locations of the respective edges found in the relevant image.
5. (Original) A method of processing images as claimed in claim 4, in which a boundary of the region of interest is derived by interpolation between the individual locations in the relevant image of the respective edges found.
6. (Original) A method of processing images as claimed in claim 5, in which the interpolation is performed inter alia on the basis of a priori information concerning the region of interest.
7. (Currently Amended) An image processing system that is arranged to process individual images that succeed one another in a direction of succession, and to reconstruct a multi-dimensional data set from the individual images, which multi-dimensional data set assigns data values to positions in a multi-dimensional space, which multi-dimensional space is set up by the direction of succession and two directions parallel to the surface of the individual images, to reconstruct a slice through the multi-dimensional data set along a cut plane through the multi-dimensional space, and to segment of a region of interest from the one or more relevant images is performed in one or more of the individual images, wherein: the segmentation is performed on the basis of information in the reconstructed slice along the cut plane through the multi-dimensional data set; an edge is located in the reconstructed

slice, and the segmentation of the region of interest in the one or more images is performed on the basis of the location of the edge found in the relevant image; whereand
the direction of the cut plane has a component in the direction of succession, and to locate a region of interest on the basis of the cut plane.

8. (Currently Amended) A computer program with instructions for processing individual images that succeed one another in a direction of succession, and for reconstructing a multi-dimensional data set from the individual images,

which multi-dimensional data set assigns data values to positions in a multidimensional space,

which multi-dimensional space is set up by the direction of succession and two directions parallel to the surface of the individual images,

reconstructing a slice through the multi-dimensional data set along a cut plane through the multi-dimensional space,

segmenting a region of interest from the one or more relevant images is performed in one or more of the individual images, wherein the segmenting is performed on the basis of information in the reconstructed slice along the cut plane through the multi-dimensional data set,

locating an edge in the reconstructed slice, wherein the segmenting in the region of interest in the one or more images is performed on the basis of the location of the edge found in the relevant, wherein where

the direction of the cut plane has a component in the direction of succession, and for locating a region of interest on the basis of the cut plane.

9. (Original) A medical diagnostic workstation that is provided with an image processing system as claimed in claim 7, for example, programmed by way of a computer program as claimed in claim 8.